

Dampier to Bunbury Natural Gas Pipeline Stage 5 Expansion

Dampier to Bunbury Natural Gas Pipeline (WA) Nominees Pty Ltd

**Report and recommendations
of the Environmental Protection Authority**

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1. Introduction and background

This report provides the Environmental Protection Authority's (EPA's) advice and recommendations to the Minister for the Environment on the proposal by Dampier to Bunbury Natural Gas Pipeline (DBNGP) (WA) Nominees Pty Ltd (the proponent) to construct and operate a 1270-kilometre underground gas pipeline between Dampier and Wagerup. The proposal is known as the Stage 5 Expansion project and consists of eleven separate looping sections and the upgrading of several compressor stations.

The proposal is designed to increase the supply of natural gas to the south-west of Western Australia, where there is increasing demand for gas in domestic and commercial sectors.

Dampier Bunbury Pipeline is the trading name of the DBNGP group of companies. DBNGP (WA) Nominees Pty Ltd is the holder of the pipeline license for the DBNGP, and is one of the companies forming the Dampier Bunbury Pipeline group. Alinta Network Services Pty Ltd is the Project Manager for the work.

Section 44 of the *Environmental Protection Act 1986* (EP Act) requires the EPA to report to the Minister for the Environment on the outcome of its assessment of a proposal. The report must set out:

- the key environmental factors identified in the course of the assessment; and
- the EPA's recommendations as to whether or not the proposal may be implemented, and, if the EPA recommends that implementation be allowed, the conditions and procedures to which implementation should be subject.

The EPA may include in the report any other advice and recommendations as it sees fit.

The proponent has submitted a referral document (Strategen, September 2006) setting out the details of the proposal, potential environmental impacts and appropriate methods to manage those impacts.

The EPA considers that the proposal, as described, can be managed to meet the EPA's environmental objectives, subject to the EPA's recommended conditions being made legally binding.

The EPA has therefore determined under Section 40 of the EP Act that the level of assessment for the proposal is Assessment on Referral Information (ARI), and this report provides the EPA advice and recommendations in accordance with Section 44 of the EP Act.

2. The proposal

The proponent proposes to construct and operate a number of looping sections adjacent (and connected) to the existing underground gas transmission pipeline within the DBNGP corridor. There are eleven separate looping sections proposed from south of Dampier to Wagerup West (Figure 1).

Looping is a process of duplicating an existing pipeline between compressor stations for a certain distance. Once the specified distance is reached, it then ties back to the parallel pipeline. This design results in an increase in both the gas flow rate and the volume of gas stored within the pipeline infrastructure.

The proposal is described in detail in Chapter 1 of the proponent's *DBNGP Stage 5 Expansion Environmental Impact Assessment* (Strategen, 2006).

The main characteristics of the proposal are summarised in Table 1.

The Stage 5 Expansion will be constructed in stages, with Stage 5A commencing in January 2007. Subsequent stages will be constructed to match the increasing demand in fuel gas, and are expected to be substantially completed within five years. Precise scheduling and definitions of the individual stages proposed to be constructed subsequent to Stage 5A have not been finalised at this time. Details of Stage 5A are listed in Table 1.5 of the proponent document (Strategen, September 2006).

Construction techniques will be in accordance with the requirements of *AS2885 Pipelines – Gas and Liquid Petroleum* and the Australian Pipeline Industry Association *Code of Environmental Practice*.

The potential impacts of the proposal are discussed by the proponent in the referral document (*DBNGP Stage 5 Expansion Project Environmental Impact Assessment*, Strategen, September 2006).

Table 1: Summary of key proposal characteristics

Element	Description			
Location	There will be eleven loops, between Dampier and Wagerup West (Main Line Valve 144).			
Proposed action	Construct eleven pipeline looping lengths of about 660 mm diameter, buried adjacent to the existing DBNGP. These pipeline lengths will be looped to the existing DBNGP to increase flow of natural gas.			
Total length of looping	Approximately 1270 kilometres			
Characteristics of each loop	No	Approx. length (km)	Biogeographical Region	Shire
	0	137	Pilbara	Roebourne
	1	123	Pilbara	Ashburton
	2	104	Carnarvon, Gascoyne	Ashburton
	3	113	Carnarvon, Gascoyne	Carnarvon
	4	113	Carnarvon	Carnarvon, Upper Gascoyne
	5	119	Carnarvon, Yalgoo	Shark Bay
	6	131	Yalgoo, Geraldton Sand Plains	Northampton, Chapman Valley, Mullewa
	7	142	Geraldton Sand Plains	Mullewa, Irwin, Carnamah
	8	97	Geraldton Sand Plains, Swan Coastal Plain	Coorow, Dandaragan, Gingin
	9	128	Swan Coastal Plain	Gingin, Chittering, City of Swan, City of Belmont, Kalamunda, Gosnells, City of Armadale, City of Cockburn, Town of Kwinana
10	61	Swan Coastal Plain	Serpentine-Jarrahdale, Murray, Waroona	
Proposed tenure	The pipeline will be constructed wholly within the existing DBNGP easement which is gazetted under the <i>Dampier to Bunbury Pipeline Act 1997</i> .			
DBNGP easement width	The existing DBNGP easement is 30 m wide. The area to be cleared and graded in the northern loops (Dampier to Muchea) will be approximately 30m and south of Muchea, the area cleared will be 20 to 30m. Working widths of 20m will apply in environmentally sensitive areas.			
Activities outside the DBNGP easement	Turnaround bays, campsites, turkey nests, laydown areas, water supply sources, access roads, works associated with watercourse and dune crossings			
Temporary area of disturbance within DBNGP easement	Approximately 3175 ha, all to be rehabilitated in consultation with landowners			
Estimated area of vegetation clearing within DBNGP easement	Approximately 1264 hectares, all to be rehabilitated in consultation with landowners			
Temporary area of disturbance outside the DBNGP easement	Approximately 139 ha, all to be rehabilitated in consultation with landowners.			
Construction duration	The Stage 5 Expansion will be constructed in stages, with Stage 5A commencing about January 2007 (Chapter 1, Section 2.5, Strategen, September 2006). The subsequent stages will be constructed to match the increasing demand in fuel gas, and full looping is expected to be substantially completed within five years of approval.			
Construction workforce	Up to 900 people			

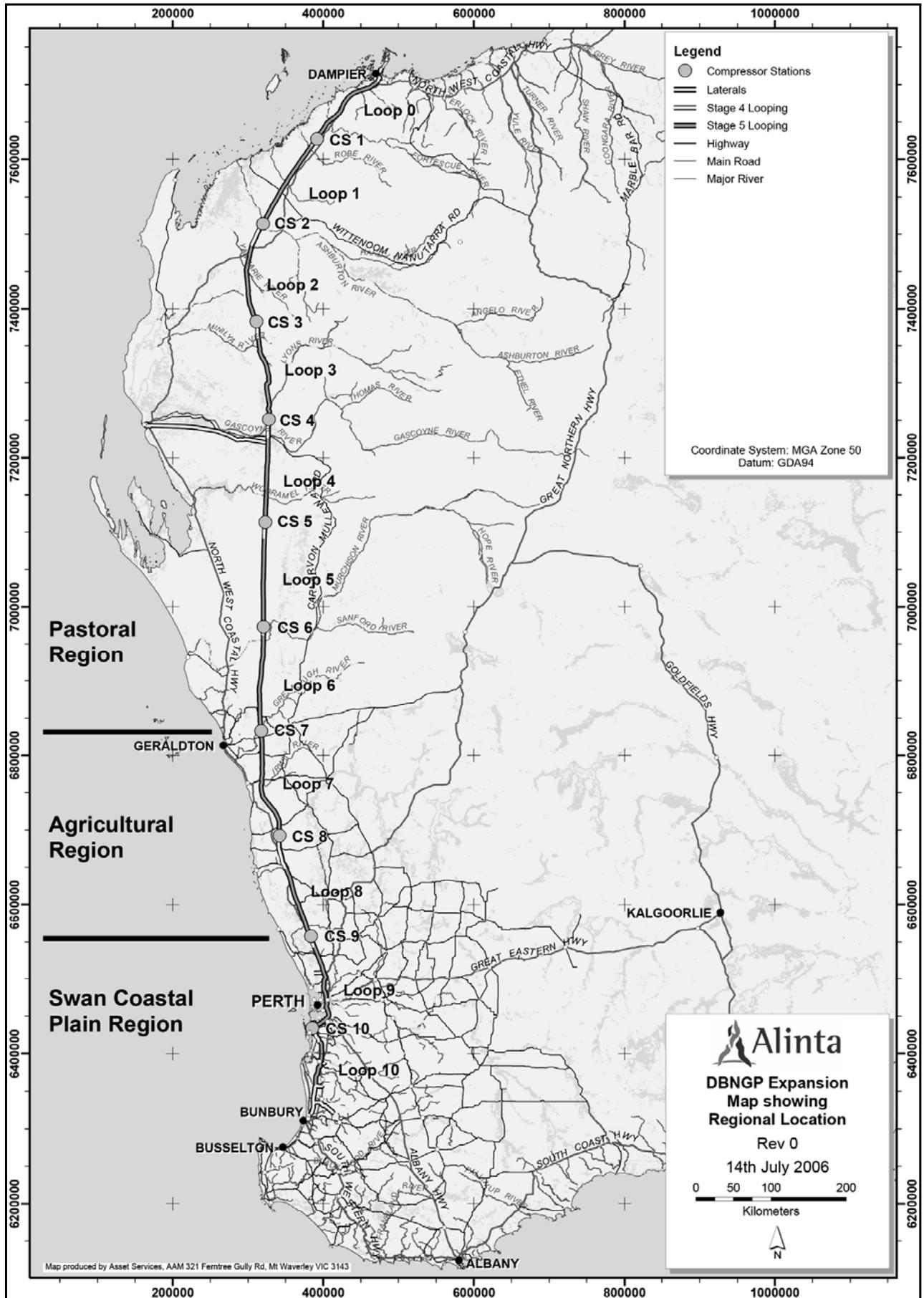


Figure 1: Pipeline location

2.1 Alternative Routes Considered

The DBNGP corridor was selected in the late 1970's following various route selection studies. At the time, six alternative corridors were selected for more detailed review of topographic, geological and biological investigation for the regions between Dampier and Perth. The main factors influencing the locations of the alternative corridors were: avoidance of built up areas; avoidance of existing and proposed national parks and conservation reserves; possible advantages of paralleling existing service corridors; and availability of existing access.

The six alternative corridors were assessed, and based on a large number of environmental and engineering considerations, the proposed corridor was selected.

In 2001, the EPA provided its Section 16(e) advice to the Minister for the Environment and Heritage on the strategic assessment to expand the land corridor for the Dampier to Bullsbrook section of the DBNGP (EPA, 2001). The expansion was proposed to enable additional future gas pipeline capacity for the gas suppliers of the North West Shelf to service customers in the Pilbara and south-west of the State.

3. Consultation

During the preparation of the ARI, the proponent has undertaken consultation with government agencies and key stakeholders. The agencies, groups and organisations consulted, the comments received and the proponent's response are detailed in the proponent document (Strategen, September 2006).

A number of environmental issues were raised by the stakeholders during the consultation. Table 2 summarises the main issues raised and details the actions taken by the proponent to address the issues.

Table 2: Summary of issues raised during stakeholder consultation

Issue Raised	Stakeholder	Response
None	Local Government Local landowners Department of Industry and Resources (considering Stage 5 Expansion CEMP under the pipeline licence issued under the <i>Petroleum Pipelines Act 1969</i>) Department of Planning and Infrastructure (land access) Department of Indigenous Affairs Wetlands Conservation Society	
Noise: Concerns over vibration and blasting impacts	Department of Environment and Conservation	Blasting will be highly controlled because of proximity of adjacent live gas pipeline. No blasting is expected to occur in or near residential areas. No heavy compaction will be undertaken.
Noise: Concerns on construction noise impacts in metropolitan area	Department of Environment and Conservation	Noise levels will be less than for normal road construction activities, and proponent has committed to undertaken work within prescribed hours and compliance with the Noise Regulations.

Issue Raised	Stakeholder	Response
Noise: Upgraded compressor station noise levels	Department of Environment and Conservation	Upgrades only involve changes to peripheral equipment and little upgrading of the compressor units will be undertaken. DBP is undertaking a comprehensive noise survey of all pipeline operations, and any issues should be considered when survey is completed.
Noise: Review of management protocol by noise/vibration expert	Department of Environment and Conservation	Project is simple construction project with small to medium sized equipment, and will be less noisy than conventional roadwork project. Proponent has committed to meeting Noise Regulations and believes there is little value in an expert review.
Noise: Minor editorial and other issues	Department of Environment and Conservation	See attached detailed agency comments and proponent responses. Some modification made to CEMP in response.
Fauna: Lengths of trench open	Department of Environment and Conservation Conservation Council	Risk associated with length of trench open relates to ability to inspect and clear trench. Therefore, inspection and clearing resources should be the constraining criterion. This is an auditable aspect and is outcome based, rather than a prescriptive solution. DEC proposal that pipeline can be constructed using only a 20-30 m trench is completely impractical for a 660 mm steel main, and is only applicable to very small diameter plastic pipelines.
Fauna: Need to avoid trenching in Loops 0 to 2 in summer months (November to March)	Department of Environment and Conservation	The draft CEMP has been accordingly modified to avoid open trenching in Loops 0 to 2 during April to October where practical, and to consult with DEC on management measures if trenching is considered unavoidable during those times.
Fauna: Need for definition of "high mortality threshold"	Department of Environment and Conservation	Draft CEMP modified to include need to determine criteria in consultation with DEC.
Fauna: DEC proposed as approving agency for fauna protocol in CEMP	Department of Environment and Conservation	Expectation is that the EPA would be the approving agency for fauna protocol and would consult with DEC.
Fauna: Width of construction corridor	Department of Environment and Conservation	EIA and draft CEMP commits to reduced working widths in conservation value areas, reflecting practice accepted for Stage 4 Expansion.
Rehabilitation: Monitoring and action in areas where rehabilitation not complete	Department of Environment and Conservation	Objective has been reworded as suggested.
Rehabilitation: Criteria modification suggested	Department of Environment and Conservation	Criteria have been amended as suggested.
Acid sulphate soils: Several risk areas not addressed	Department of Environment and Conservation	Pipeline route does not traverse areas suggested as not addressed.
Acid sulphate soils: Risk mapping	Department of Environment and Conservation	Risk mapping definitions clarified in the detailed response (attached).
Acid sulphate soils: Limiting dewatering	Department of Environment and Conservation	Dewatering will be limited to the extent practical.
Flora and vegetation: Need for surveys and detailed vegetation report	Department of Environment and Conservation	Southern spring survey requirement is included in formal proponent commitments. Detailed vegetation report (Mattiske 2006) has been included in appendices of revised EIA.
Flora and vegetation: Management of significant weed population prior to disturbance	Department of Environment and Conservation	Draft CEMP amended accordingly.
Wetlands: Identification of wetlands in northern areas	Department of Environment and Conservation	Activities will not significantly affect the ephemeral wetlands in the northern areas as they are generally either watercourses or claypans that fill with water after rainfall events. They are not groundwater based wetlands as occur on the Swan Coastal Plain. The Watercourse Crossing Protocol (draft CEMP) addresses impacts on watercourse. No benefit would be obtained from a reduced working width in the other northern wetlands.
Wetlands: need for surveys	Department of Environment and Conservation	Vegetation mapping undertaken has identified wetland areas.

Issue Raised	Stakeholder	Response
Aboriginal heritage report presentation	Department of Environment and Conservation	Final report prepared that addresses all concerns and included in revised appendices to EIA.
Weed and soil management: Detailed information on location of weeds	Department of Environment and Conservation	Mattiske (2006) included as appendix to revised EIA, contains details of weed location areas.
Weed and soil management: Control and hygiene post-construction	Conservation Council Wildflower Society Department of Environment and Conservation	Corridor is an existing cleared zone and will continue to be managed in a similar manner to the present. The proposal will not materially affect the post-construction impacts or management of the easement.
Weed and soil management: Compaction of soil and impact on plant growth	Department of Environment and Conservation	Compaction will be minor and will not affect plant regrowth.
Weed and soil management: Control of erosion	Department of Environment and Conservation	Soil Management Protocol provides for erosion control measures
Protection of water quality in public drinking water supply catchments	Department of Water	EIA and draft CEMP modified to acknowledge all DoW requirements in public drinking water supply catchments.
Watercourse and dune crossings: Rehabilitation plans for watercourse crossings	Department of Environment and Conservation	Draft CEMP modified to require preparation of rehabilitation plans for watercourse crossings.
Licensing of water abstraction	Department of Water	The proponent is aware of the requirement to obtain permits for watercourse crossing that involve disturbance to bed or banks, and for licences to take water in proclaimed areas (and universally for artesian wells). The proponent is liaising with the Department of Water on this, and the required applications will be submitted as required.
Public review of CEMP	Wildflower Society	CEMP is a technical and detailed management plan that is being developed to meet the specific requirements of the Minister for the Environment and of the various regulatory agencies. The draft CEMP will be made public as part of the EPBC Act assessment process.

The EPA considers that the consultation process has been appropriate and that reasonable steps have been taken to inform the community and stakeholders on the proposed development.

4. Key environmental factors

It is the EPA's opinion that the following key environmental factors relevant to the proposal require evaluation in this report:

- (a) Flora and vegetation;
- (b) Fauna;
- (c) Wetlands and water resources;
- (d) Rehabilitation, weeds and hygiene; and
- (e) Acid sulphate soils.

The key environmental factors are discussed in Sections 4.1 - 4.5. The description of each factor shows why it is relevant to the proposal and how it will be affected by the proposal. The assessment of each factor is where the EPA decides whether or not a proposal meets the environmental objective set for that factor.

4.1 Flora and vegetation

Description

The total area of disturbance required within the pipeline corridor for the Stage 5 expansion is approximately 3175 hectares (ha). Approximately 1264ha of this area is covered by vegetation, typically pasture or 25 year old regrowth native vegetation. A further 139ha of disturbance is required outside the corridor for the establishment of infrastructure.

A detailed vegetation and flora survey was undertaken on the proposed route for Loops 0 to 7 of the Stage 5 Expansion during the summer / autumn of 2006 (Mattiske, 2006). This survey identified twelve Priority flora species within or adjacent to the pipeline corridor in Loops 0 to 6.

Detailed vegetation and flora surveys were previously undertaken along the entire lengths of Loops 9, and 10; these studies were considered relevant for this assessment (Mattiske, 2003a, and 2003b). These surveys identified one Declared Rare and three Priority flora species in the Loop 9 corridor.

Threatened Flora and Ecological Communities datasets were obtained from Department of Environment and Conservation (DEC) for consideration of vegetation and flora values along all loops including Loop 8.

Spring flora surveys will be undertaken in 2006 prior to construction along Loops 8, 9 and 10 to identify and map locations of Priority and Declared Rare Flora species.

The pipeline corridor passes through and adjacent to several areas of conservation value including National Parks, Nature Reserves, Conservation Reserves, Environmentally Sensitive Areas (ESAs), and one Threatened Ecological Community (TEC). Loops 0 to 6 pass through a proposed National Park (Cane River Station), a C Class Reserve (Toolonga Nature Reserve) and the coastal margin from Cape Preston to Cape Keraudren (Register of the National Estate - not yet formally recognised). Loops 7 to 8 pass through three A Class Nature Reserves: Burma Road Nature Reserve, Hill River Nature Reserve & Minyulo Nature Reserve, a National Park (Badgingarra National Park), and one C Class Reserve (Twyata Nature Reserve). Loops 9 to 10 pass through fifteen *Bush Forever* sites, several of which contain natural places listed on the Register of the National Estate, and adjacent to Buller Nature Reserve. Five occurrences of one TEC, '*Corymbia calophylla* - *Kingia australis* woodlands on heavy soils of the Swan Coastal Plain', have been recorded within the pipeline corridor. Vegetation condition of these communities varies from very good to extremely degraded.

Details of flora, vegetation, and areas of conservation value are provided in the proponent's document (Strategen, September 2006) as follows: Chapter 2 (Sections 1 and 3) for Loops 0 to 6, Chapter 3 (Sections 1 and 3) for Loops 7 & 8, Chapter 4 (Section 1) for Loops 9 & 10, and Appendix 2 (Mattiske, 2006, 2003a & 2003b).

The potential impacts of pipeline construction on flora and vegetation include:

- clearing of previously rehabilitated and remnant native vegetation;
- removal of individuals of Declared Rare and Priority Flora;
- impacts on TECs;
- vegetation impacts from altered water regimes;

- smothering of vegetation by dust; and
- fire risk (associated with metal cutting, welding and grinding activities).

All trench excavation and pipeline construction work will be contained within the existing 30m wide DBNGP corridor (except for infrastructure such as turnaround bays and campsites). Sites of temporary disturbance, such as borrow pits and vehicle parking areas are to be located on previously disturbed areas wherever practicable and will be selected to avoid impacts on conservation significant areas.

In environmentally sensitive areas, a restricted working width of 20m or less will be applied and areas of temporary disturbance such as borrow pits and turkey nests (water storages constructed by hollowing out an area of land and using the fill to build up its sides) will be located outside these areas wherever possible. Areas of significant vegetation will be marked and avoided where possible, and Threatened Flora avoided or translocated where practicable.

Assessment

The EPA's environmental objectives for this factor are to:

- maintain the abundance, diversity, geographic distribution and productivity of flora and vegetation at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge;
- protect Declared Rare and Priority Flora, consistent with the provisions of the *Wildlife Conservation Act, 1950*; and
- protect the environmental values of national parks and other nature reserves.

The EPA notes the results of the flora and vegetation survey that was undertaken on the proposed route for Loops 0 to 7 of the Stage 5 Expansion during the summer / autumn of 2006 (Mattiske, 2006), and from the vegetation and flora surveys that were previously undertaken along the entire lengths of Loops 9 and 10 (Mattiske, 2003a, 2003b).

The EPA notes the various concerns that were raised by the DEC in relation to flora and vegetation, and the proponent's response to those concerns (refer to Table 2 in this report).

In order to address the concerns that were raised by the DEC, the EPA considers that a condition (i.e. Condition 6 in Appendix 2) should be imposed on the proponent to submit a report to the DEC which details the results of the spring flora surveys undertaken in 2006 along Loops 8, 9, and 10. The EPA considers that the report should:

- record the location of any Declared Rare Flora, Priority Flora and other species of conservation significance;
- identify any TECs and other environmentally sensitive areas;
- describe the habitat in which specially protected or conservation significant flora species were found, and the extent of the contiguous area of the same habitat in the local area;

- specify the degree of impact of the proposed works on specially protected or conservation significant flora species, its identified contiguous habitat or TECs and other environmentally sensitive areas;
- identify the proposed management strategy for the protection of Declared Rare Flora, Priority Flora, Threatened Ecological Communities, other conservation significant species and TECs and other environmentally sensitive areas identified; and
- identify the post activity monitoring plan of specially protected or conservation significant flora species.

The EPA notes the measures that will be employed during construction in order to reduce potential impacts on flora and vegetation in environmentally sensitive areas, including:

- the use of a restricted working width of 20m or less in environmentally sensitive areas;
- locating areas of temporary disturbance such as borrow pits and turkey nests outside environmentally sensitive areas wherever possible; and
- marking and avoiding areas of significant vegetation where possible, and avoiding or translocating Threatened Flora where practicable.

In order to reduce potential impacts on flora and vegetation, the EPA recommends that an additional condition (i.e. Condition 7 in Appendix 2) be imposed on the proponent in relation to the vegetation disturbance. The vegetation disturbance condition would include the need for the proponent to:

- clearly delineate on the ground the boundaries of the pipeline easement and the delineated area for disturbance outside the easement;
- not cause or allow disturbance of vegetation outside the delineated pipeline easement, or the area of disturbance outside the easement; and
- not cause or allow disturbance outside the 20m wide easement in environmentally sensitive areas including National Parks, nature reserves, wetlands, and any other identified environmentally sensitive areas.

Summary

Having particular regard to the:

- concerns that were raised by the DEC;
- recommended conditions requiring the proponent to submit a report to the DEC which details the results of the spring flora surveys undertaken in 2006 along Loops 8, 9, and 10, and to prevent vegetation disturbance outside the boundaries of the pipeline easement and the area delineated for disturbance outside the easement;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

4.2 Fauna

Description

A Level 1 fauna survey of the entire pipeline corridor was undertaken (Bancroft and Bamford, 2006b) in accordance with EPA Position Statement No. 3. This survey identified potentially important areas of fauna habitat along the pipeline route, which include remnant bushland, conservation reserves, drainage lines and wetland areas. The survey found that 66 species of conservation significant vertebrate fauna are likely to be encountered along the pipeline route. Of these, the species most likely to be impacted upon by the proposal are ground dwelling marsupials and reptiles.

Conservation significance was defined as any species listed under State or Commonwealth Acts, as Threatened or Priority species by the DEC or considered of local significance because of their pattern of distribution. Also identified were fauna groups at high risk of impact from the proposal (including geckoes and macropods) but which are not formally recognised as conservation significant.

Bancroft and Bamford (2006a) also undertook a review of fauna interactions during some of the Stage 4 expansion construction works to refine fauna interaction procedures for the Stage 5 Expansion. This review also identified seasons and weather conditions where high densities of fauna could be expected to occur.

Potential impacts of the pipeline construction on fauna include:

- death / injury of fauna during clearing, grading and impact with vehicles;
- entrapment of fauna in trenches that are excavated to receive the pipeline;
- spread of weeds and feral fauna along cleared line;
- fragmentation of habitat (temporary);
- loss of habitat; and
- increase in feral fauna due to provision of water in turkey nests (temporary).

Assessment

The EPA's environmental objective for this factor is to maintain the abundance, diversity, geographic distribution and productivity of fauna at species and ecosystem levels through the avoidance or management of adverse impacts and improvement in knowledge.

The EPA notes the various concerns that were raised by the DEC and Conservation Council in relation to fauna and the proponent's response to those concerns (refer to Table 2 in this report).

The EPA notes that the proponent has prepared a Fauna Interaction Protocol with input from the DEC. The EPA understands that this protocol includes time limits on trench openings, fauna teams to remove and relocate fauna that become trapped in trenches and backfilling of trenches where there is potential for flooding.

In view of the above, the EPA recommends that a condition (i.e. Condition 8 in Appendix 2) should be imposed on the proponent in relation to fauna. The recommended condition would require the proponent to:

- prepare and implement a fauna management plan which includes a fauna interaction protocol, in consultation with the DEC, that sets out procedures:
 - for clearing the area of the open trench by the fauna clearing people each day by 4.5 hours after sunrise for Loops 0-7; and 5 hours after sunrise for Loops 8-10; and half an hour prior to the backfilling of the pipeline trench;
 - to minimise and manage impacts on conservation significant fauna species identified in Bamford and Bancroft (2006b);
 - mark significant habitat trees of sufficient age to form nesting hollows for hollow-nesting birds and mammals, in consultation with the DEC, and not fell marked trees, except in the case where habitat trees occur in the direct line of the proposed pipeline; and
 - pump out any pooled water in the open trench (except groundwater) in the event of significant rainfall, and following the clearing of fauna from the trench, and discharge it via a mesh (to dissipate energy) to adjacent vegetated areas.
- employ at least two people per 13.5 kilometres of open trench in Loops 0 to 7 and per 15 kilometres in Loops 8 to 10, to remove fauna from the trench. These people will need to be able to demonstrate suitable experience to obtain a fauna handling licence from the DEC;
- ensure no part of the trench shall remain open for more than 14 days except “bell holes” unless authorised by the Minister for the Environment;
- in conservation areas no part of the trench shall remain open for more than 7 days unless authorised by the Minister for the Environment; and
- review and revise the fauna management plan as required.
- produce monthly performance monitoring reports that are to be made publicly available.

The EPA considers that an additional condition (i.e. Condition 9 in Appendix 2) should also be imposed on the proponent in relation to the timing of construction work to reduce potential impacts on fauna. The recommended condition would require the proponent to:

- undertake trench work on Loops 0 to 2 between April and October (inclusive). Where for operational reasons the proponent is required to undertake open trench work outside these times, fauna clearing as described in Condition 8-2 shall be completed by 3 hours after sunrise, or when temperatures exceed 35°C, shall be completed by 2.5 hours after sunrise.
- undertake open trench work on Loops 8 to 10 between January and May (inclusive). Where for operational reasons, the proponent is required to undertake open trench work outside these times, the proponent will comply implement the Wetland Crossing

Management Plan in Conditions 10-3, and dieback management to the requirements of DEC.

Summary

Having particular regard to the:

- concerns that were raised by the DEC and Conservation Council in relation to fauna;
- the recommended conditions pertaining to the protection of fauna, the development and implementation of a fauna management plan, and the timing of construction work;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

4.3 Wetlands, watercourses, and water resources

Description

Wetlands

The pipeline corridor passes through several ephemeral wetlands, claypans and a palusplain wetland in Loops 0 to 8, which are typically associated with the floodplains of major rivers. In the Swan Coastal Plain region (Loops 9 & 10), the pipeline corridor passes through over 100 mapped wetlands, many of which are of regional significance (Conservation Category wetlands and Environmental Protection Policy lakes). Two Ramsar wetland systems (Peel-Yalgorup System and Forrestdale Lake) are also traversed in this region. Appendix 3 of the proponent's document (Strategen, September 2006) provides details of all wetlands and buffer areas traversed in Loops 9 and 10.

Watercourses

The pipeline corridor also traverses many watercourses, including major rivers, throughout the pastoral, agricultural and Swan Coastal Plain regions. These are listed in Section 5.3 of Chapter 2, Section 5.3 of Chapter 3 and Section 4 of Chapter 4 of the proponent's document (Strategen, September 2006). Water courses will be traversed using either open-cut or horizontal directional drilling techniques depending on site conditions.

Water resources

The pipeline corridor traverses the Allanooka-Dongara Water Reserve which protects the Water Corporation wellfield used to supply water to Geraldton and Dongara. The Allanooka-Dongara Water Reserve is proclaimed under the *Country Area Water Supply Act, 1947*, which requires that activities are managed so that the quality of groundwater resources within the reserve is not compromised.

Potential impacts of the pipeline construction on wetlands, watercourses, and water resources include:

- physical disturbance to watercourses / wetlands, banks and riparian vegetation;
- changes to the hydrological regimes of wetlands;

- alteration to surface water flow regimes;
- deterioration in surface water and groundwater quality; and
- groundwater drawdown.

Assessment

The EPA's environmental objectives for this factor are to:

- maintain the integrity, ecological functions and environmental values of protected wetlands;
- maintain the integrity, ecological functions and environmental values of watercourses;
- maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance, are protected; and
- ensure that emissions do not adversely affect environment values of the health, welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards.

The EPA notes the various concerns that were raised by the DEC, the Department of Agriculture, and the Department of Water in relation to wetlands, watercourses, and water resources, as well as the proponent's response to those concerns (refer to Table 2 in this report).

The EPA considers that conditions (i.e. Conditions 10 and 11 in Appendix 2) should be imposed on the proponent in relation to watercourse and wetland crossings. The recommended conditions would require the proponent to:

- delineate the riparian vegetation along watercourses that will be traversed;
- not cause or allow disturbance of riparian vegetation or watercourse beds and banks during construction of the watercourse crossings unless authorised by the Water and Rivers Commission under the provisions of the *Rights in Water and Irrigation Act, 1914*; and
- prepare a Wetland Crossing Management Plan to the requirements of the Department of Environment and Conservation, which sets out procedures that will be used to protect any wetland crossed by the trench in the event that trenching is proposed when there is standing water in the wetland.

The EPA notes from the proponent's referral document that activities within the Allanooka-Dongara Water Reserve will be undertaken in a manner which meets the requirements of the Department of Water regarding all activities with the potential to pollute groundwater resources.

Summary

Having particular regard to the:

- concerns that were raised by the DEC, the Department of Agriculture, and the Department of Water;
- recommended condition relating to watercourse crossings; and
- proponent indicating that it will undertake activities within the Allanooka-Dongara Water Reserve in a manner which meets the requirements of the Department of Water;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

4.4 Rehabilitation, weeds and dieback

Description

The pipeline corridor traverses a range of soil and terrain conditions, and land uses that include agriculture, grazing and conservation areas. Ground disturbing activities such as clearing, trenching and excavation have the potential to cause soil erosion, compaction, loss of soil productivity and affect land usage.

Construction activities and the movement of vehicles have the potential to introduce or disperse weeds and diseases such as dieback (caused by *Phytophthora cinnamomi*) along the pipeline corridor and surrounding areas. The highest risk of weed and dieback spread will be during clear and grade operations and rehabilitation.

Dieback will require management on Loops 8, 9, and 10 where rainfall is sufficient for the disease to occur. The proponent has indicated that dieback mapping will occur along these loops prior to the commencement of construction.

Weed surveying has been undertaken by the proponent as part of vegetation surveys for Loops 0 to 7 and 9 to 10. High numbers of weeds occurred in various areas of the pipeline corridor, including several species of Declared plants. Further weed mapping of Loops 8, 9 and 10 will occur in conjunction with spring flora surveys.

The proponent has drafted weed, dieback and soil management protocols and a set of rehabilitation criteria as part of a rehabilitation protocol.

The potential impacts of pipeline construction on rehabilitation, weeds and dieback include:

- erosion (wind and rain) of the corridor and subsequent transport of material off-site;
- soil compaction;
- soil inversion whereby the topsoil is 'lost' through burial or mixing with other trench soil;
- introduction and / or spread of weeds; and
- introduction and / or spread of dieback.

Assessment

The EPA's environmental objectives for this factor are to:

- ensure that post-disturbance landforms are stable and comparable to those which existed pre-disturbance;
- maintain the integrity, ecological functions and environmental values of the soil and landform;
- ensure that rehabilitation achieves an acceptable standard compatible with the intended landuse(s), and consistent with the appropriate criteria;
- return self-sustaining native vegetation which is as close as possible to the pre-disturbance vegetation in species composition and ecological function; and
- avoid or minimise the potential for the spread of weeds and dieback.

The EPA notes the various concerns that were raised by the DEC and the Department of Agriculture in relation to rehabilitation, weeds, and dieback, as well as the proponent's response to those concerns (refer to Table 2 in this report).

The EPA considers that a condition (i.e. Condition 12 in Appendix 2) should be imposed on the proponent requiring it to prepare and implement a rehabilitation management plan which:

- includes weed, dieback, and soil management protocols, as well as appropriate rehabilitation completion criteria;
- requires the proponent to continue to manage rehabilitation of the pipeline route until the rehabilitation completion criteria have been achieved; and
- requires the proponent to review and revise the rehabilitation management plan in consultation with the DEC as required.

The EPA considers that given that much of the route has previously been disturbed and rehabilitated, it is likely that a reduced propagule load will be present in the topsoil. It may therefore be necessary to augment rehabilitation by adding local provenance native seed to achieve the required completion criteria.

Summary

Having particular regard to the:

- concerns that were raised by the DEC and the Department of Agriculture;
- recommended condition requiring the development and implementation of a rehabilitation management plan.

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

4.5 Acid sulphate soils

Description

Exposure of acid sulphate soils to air and water during pipeline construction may result in soil and water becoming contaminated with sulphuric acid and metals such as iron and arsenic.

A desktop assessment was undertaken (Parsons Brinckerhoff, 2006) to predict the likelihood of encountering acid sulphate soils along the Stage 5 Expansion route. Medium and high risk acid sulphate soil areas have been identified along the pipeline corridor, mostly in Loops 9 and 10 where shallow groundwater occurs. Prior to construction, these areas will be the subject of detailed field investigations to validate results from the desktop study.

Potential impacts of pipeline construction on acid sulphate soils are exposure and dewatering of acid sulphate soils resulting in acid contamination and release of metals.

Assessment

The EPA's environmental objective for acid sulphate soils is to maintain the integrity, ecological functions and environmental values of the soil and landform.

The EPA notes the various concerns that were raised by the DEC and the Department of Agriculture in relation to acid sulphate soils, and the proponent's response to those concerns (refer to Table 2 in this report).

In view of the above, the EPA recommends that a condition (i.e. Condition 13 in Appendix 2) be imposed on the proponent requiring it to prepare and implement an acid sulphate soils and dewatering management plan which requires the proponent to:

- undertake further investigations of medium and high risk areas for acid sulphate soils, including field studies prior to the commencement of construction as specified by the DEC;
- demonstrate that all practical measures will be employed to manage the potential impacts from acid sulphate soils and dewatering activities; and
- review and revise the acid sulphate soils and dewatering management plan to the requirements of the DEC.

Summary

Having particular regard to the:

- concerns that were raised by the DEC and the Department of Agriculture;
- recommended condition requiring the development and implementation of an acid sulphate soils and dewatering management plan;

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

5. Conditions

5.1 Recommended conditions

Having considered the information provided in the proponent's document, submissions and this report, the EPA has developed a set of conditions that the EPA recommends be imposed if the proposal by Dampier to Bunbury Natural Gas Pipeline (WA) Nominees Pty Ltd to construct and operate eleven looping sections of natural gas pipeline adjacent and connected to the existing Dampier to Bunbury Natural Gas Pipeline is approved for implementation. These conditions are presented in Appendix 2.

6. Other Advice

The EPA notes that while advising that this proposal can be managed so as not to compromise the EPA's objectives, it should not be seen as a precedent that future gas pipelines within this, and other environmentally sensitive areas of the existing DBNGP corridor, would be considered acceptable. The EPA reiterates its earlier advice set out in its Section 16(e) report *Dampier to Bunbury Natural Gas Pipeline Land Corridor Expansion Project* (EPA, 2001), that its preference is that future pipelines are located in an alternative easement which avoids environmentally sensitive areas.

7. Conclusions

The EPA has considered the proposal by Dampier to Bunbury Natural Gas Pipeline (WA) Nominees Pty Ltd to construct and operate eleven looping sections of natural gas pipeline adjacent and connected to the existing Dampier to Bunbury Natural Gas Pipeline.

The EPA considers that impacts on flora and vegetation as a result of the proposed clearing and trench construction, are able to be managed by restricting clearance and activities are carried out in accordance with the Rehabilitation Management Plan and Acid Sulphate Soils and Dewatering Management Plan. The EPA considers that the potential impacts on wetlands are not likely to be significant, given the timing of proposed trench construction, and that rehabilitation will occur in wetland areas. The EPA considers it unlikely that this proposal would result in a high level of fauna mortality provided that works are timed appropriately (Condition 9) and a Fauna Interaction Protocol is implemented.

The EPA has therefore concluded that the proposal can be managed to meet the EPA's environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2.

8. Recommendations

The EPA submits the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for the DBNGP Stage 5 Expansion, Loops 0 to 10 from Dampier to Wagerup;

2. That the Minister considers the report on the key environmental factors as set out in Section 4;
3. That the Minister notes that the EPA has concluded that the proposal can be managed to meet the EPA's environmental objectives, provided there is satisfactory implementation by the proponent of the recommended conditions set out in Appendix 2; and
4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

- Bancroft and Bamford (2006a) *Management of the Impacts of Fauna During the Stage 4 Expansion of the Dampier to Bunbury Natural Gas Pipeline (DBNGP) Corridor*. Unpublished report prepared for Strategen, June 2006.
- Bancroft and Bamford (2006b) *Fauna Values of Stage 5 of the Dampier to Bunbury Natural Gas Pipeline (DBNGP): A Review*. Unpublished report prepared for Strategen, June 2006.
- EPA (2001) *Dampier to Bunbury Natural Gas Pipeline Land Corridor Expansion Project*. Advice to the Minister for the Environment and Heritage under Section 16(e). Environmental Protection Authority, Perth, Western Australia.
- Mattiske (2006) *Flora and Vegetation Survey of the Dampier to Bunbury Natural Gas Pipeline (DBNGP) Stage 5 Expansion, in preparation, July 2006*. Unpublished report prepared for Strategen, June 2006.
- Mattiske (2003a) *Flora and Vegetation Survey of the Kwinana to Bullsbrook Gas Pipeline Infrastructure Corridor*. Unpublished report prepared for the Department of Industry and Resources, Perth. August 2003.
- Mattiske (2003b) *Flora and Vegetation Survey of the Proposed Kwinana to Australind Gas Pipeline Infrastructure Corridor*. Unpublished report prepared for Bowman Bishaw Gorham and the Department of Mineral and Petroleum Resources, Perth. November 2003.
- Parsons Brinckerhoff (2006) *Dampier to Bunbury Natural Gas Pipeline Stage 5 Expansion – Acid Sulphate Soil and Hydrologic Desktop Study*. Unpublished report prepared for Strategen, June 2006.
- Strategen (2006) *DBNGP Stage 5 Expansion Environmental Impact Assessment*. Strategen, Leederville, Western Australia.

Appendix 2

Recommended Environmental Conditions

RECOMMENDED ENVIRONMENTAL CONDITIONS

**STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
(PURSUANT TO THE PROVISIONS OF THE
ENVIRONMENTAL PROTECTION ACT 1986)**

DAMPIER TO BUNBURY NATURAL GAS PIPELINE STAGE 5 EXPANSION

Proposal: The construction of eleven loops adjacent and connected to the existing underground gas transmission pipeline within the existing corridor to raise the capacity of the system.

Proponent: DBNGP (WA) Nominees Pty Ltd trading as Dampier Bunbury Pipeline

Proponent Address: Level 7, GHD House
239 Adelaide Terrace
PERTH WA 6832

Assessment Number: 1655

Report of the Environmental Protection Authority: Bulletin 1231

The proposal referred to in the above report of the Environmental Protection Authority may be implemented. The implementation of that proposal is subject to the following conditions and procedures:

1 Proposal Implementation

1-1 The proponent shall implement the proposal as documented and described in schedule 1 of this statement subject to the conditions and procedures of this statement.

2 Proponent Nomination and Contact Details

2-1 The proponent for the time being nominated by the Minister for the Environment under sections 38(6) or 38(7) of the *Environmental Protection Act 1986* is responsible for the implementation of the proposal.

2-2 The proponent shall notify the Chief Executive Officer of the Department of Environment and Conservation (CEO) of any change of the name and address of

the proponent for the serving of a notice or other correspondence within 30 days of such change.

3 Time Limit of Authorisation

- 3-1 The authorisation to implement the proposal provided for in this statement shall lapse and be void within five years after the date of this statement if the proposal to which this statement relates is not substantially commenced.
- 3-2 The proponent shall provide the CEO with written evidence which demonstrates that the proposal has substantially commenced on or before the expiration of five years from the date of this statement.

4 Compliance Reporting

- 4-1 The proponent shall submit to the CEO environmental compliance reports annually reporting on the previous twelve-month period, unless required by the CEO to report more frequently.
- 4-2 The environmental compliance reports shall address each element of an audit program approved by the CEO and shall be prepared and submitted in a format acceptable to the CEO.
- 4-3 The environmental compliance reports shall:
 - 1. be endorsed by signature of the proponent's chief executive officer or a person, approved in writing by the CEO, delegated to sign on behalf of the proponent's chief executive officer;
 - 2. state whether the proponent has complied with each condition, procedure and commitment contained in this statement;
 - 3. provide verifiable evidence of compliance with each condition, procedure and commitment contained in this statement;
 - 4. state whether the proponent has complied with each key action contained in any environmental management plan or program required by this statement;
 - 5. provide verifiable evidence of conformance with each key action contained in any environmental management plan or program required by this statement;
 - 6. identify all non-compliances and non-conformances and describe the corrective and preventative actions taken in relation to each non-compliance or non-conformance;

7. provide an assessment of the effectiveness of all corrective and preventative actions taken; and
 8. describe the state of implementation of the proposal.
- 4-4 The proponent shall make the environmental compliance reports required by condition 4-1 publicly available in a manner approved by the CEO.

5 Performance Review

- 5-1 The proponent shall submit a Performance Review report every five years after the start of construction to the Environmental Protection Authority, which addresses:
1. the major environmental issues associated with implementing the project; the environmental objectives for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those objectives;
 2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;
 3. significant improvements gained in environmental management, including the use of external peer reviews;
 4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and
 5. the proposed environmental objectives over the next five years, including improvements in technology and management processes.
- 5-2 The proponent shall make the Performance Reports required by condition 5-1 publicly available in a manner approved by the CEO.

6 Report on Results of Spring Flora Surveys

- 6-1 Prior to the commencement of vegetation clearing, the proponent shall submit a report, to the Department of Environment and Conservation, which details the results of the spring flora surveys undertaken in 2006.

This report shall:

1. record the location of any Declared Rare Flora, Priority Flora and other species of conservation significance;
2. identify any Threatened Ecological Communities (TECs) and other environmentally sensitive areas;

3. describe the habitat in which specially protected or conservation-significant flora species were found, and the extent of the contiguous area of the same habitat in the local area;
 4. specify the degree of impact of the proposed works on specially protected or conservation-significant flora species, its identified contiguous habitat or TECs and other environmentally sensitive areas;
 5. identify the proposed management strategy for the protection of Declared Rare Flora, Priority Flora, Threatened Ecological Communities, other conservation-significant species and TECs and other environmentally sensitive areas identified; and
 6. identify the post-activity monitoring plan of specially protected or conservation-significant flora species.
- 6-2 The proponent shall prepare and implement a Flora and Vegetation Management Plan to the requirements of the Minister for the Environment, on advice of the Department of Environment and Conservation.

7 Vegetation Disturbance

- 7-1 Prior to ground-disturbing activities, the proponent shall clearly delineate on the ground the boundaries of the pipeline easement and the area of disturbance outside the easement.
- 7-2 The proponent shall not cause or delineate disturbance of vegetation outside the delineated pipeline easement, or the area of disturbance outside the easement, as referred to in condition 7-1, unless authorised by the Minister for the Environment.
- 7-3 The proponent shall not cause or allow disturbance of vegetation outside the 20 metre wide easement for the environmentally sensitive areas in National Parks, nature reserves and wetlands, unless authorised by the Minister for the Environment.

8 Fauna

- 8-1 Prior to ground-disturbing activities, the proponent shall prepare a Fauna Management Plan, which includes a Fauna Interaction Protocol, in consultation with the Department of Environment and Conservation, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This Plan shall set out procedures:

1. for clearing the area of the open trench by the fauna-clearing persons to be completed each day by no later than 4.5 hours after sunrise for Loops 0-7;

and completed each day by no later than 5 hours after sunrise for Loops 8-10; and at least half an hour prior to the backfilling of the pipeline trench; and

2. to minimise and manage impacts on conservation-significant fauna species identified in the Bancroft and Bamford (2006b) report provided in Appendix 2 of the proponent's *Environmental Impact Assessment* document dated September 2006;
3. for marking of significant habitat trees of sufficient age to form nesting hollows for hollow-nesting birds and mammals, prior to construction, in consultation with the Department of Environment and Conservation;
4. for the retention of marked significant habitat trees referred to above, except in the case where habitat trees occur in the direct line of the proposed pipeline; and
5. in the event of significant rainfall, the proponent shall, following the clearing of fauna from the trench, pump out any pooled water in the open trench (with the exception of groundwater) on a daily basis and discharge it via a mesh (to dissipate energy) to adjacent vegetated areas.

Note: "Fauna-clearing persons" means employees whose responsibility is to daily walk the open trench to recover and record fauna found within the trench.

- 8-2 The proponent shall employ at least two "fauna-clearing persons" per 13.5 kilometres of open trench in Loops 0-7, and at least two "fauna-clearing persons" per 15 kilometres of open trench in Loops 8-10, to remove fauna from the trench. The "fauna-clearing persons" shall be able to demonstrate suitable experience to obtain a fauna handling licence from the Department of Environment and Conservation.
- 8-3 No part of the trench shall remain open for more than 14 days except "bell holes" unless authorised by the Department of Environment and Conservation.
- 8-4 In conservation areas no part of the trench shall remain open for more than 7 days unless authorised by the Department of Environment and Conservation.
- 8-5 The proponent shall implement the Fauna Management Plan required by condition 8-1.
- 8-6 The proponent shall review and revise, as required, the Fauna Management Plan required by condition 8-1.
- 8-7 The proponent shall implement subsequent revisions of the Fauna Management Plan required by condition 8-1.
- 8-8 The proponent shall make the Fauna Management Plan required by condition 8-1 and subsequent revisions required by condition 8-6 publicly available in a manner approved by the Department of Environment and Conservation.

- 8-9 The proponent shall produce weekly performance monitoring reports on fauna management for each Loop. These reports are to be provided to the Department of Environment and Conservation each week.
- 8-10 The proponent shall produce monthly performance monitoring reports on fauna management for each Loop. These reports are to be made publicly available on completion of each Loop.

9 Timing of Construction Works

- 9-1 The proponent shall undertake open trench work on Loops 0 to 2 from April to October (inclusive) unless otherwise authorised by the CEO of the Department of Environment and Conservation. Where for operational reasons the proponent is required to undertake open trench work outside these times, fauna clearing as described in condition 8-2 shall be completed by 3 hours after sunrise, or when maximum daily temperatures are forecast to exceed 35°C, shall be completed by 2.5 hours after sunrise.
- 9-2 The proponent shall undertake open trench work on Loops 8 to 10 from January to May (inclusive) unless otherwise authorised by the CEO of the Department of Environment and Conservation. Where for operational reasons, the proponent is required to undertake open trench work outside these times, the proponent shall implement the Wetland Crossing Management Plan required by condition 11-1, and implement procedures for dieback and weed management as set out in condition 12-1.

10 River Crossings

- 10-1 The proponent shall delineate the riparian vegetation along watercourses which will be traversed on advice of the Department of Environment and Conservation.
- 10-2 The proponent shall prepare a Watercourse Crossing Management Plan to minimise disturbance of riparian vegetation, to the requirements of the Department of Environment and Conservation.

11 Wetland Crossings

- 11-1 The proponent shall prepare a Wetland Crossing Management Plan to the requirements of the Department of Environment and Conservation before trenching work commences for Loops 9 and 10. This shall set out procedures which will be used to protect any wetland crossed by the trench in the event that trenching is proposed where there is standing water in the wetland.

12 Rehabilitation

12-1 Prior to ground-disturbing activities, the proponent shall prepare a Rehabilitation Management Plan in consultation with the Department of Environment and Conservation, to the requirements of the Minister for the Environment on advice of the Environment Protection Authority.

This plan shall address:

1. weed management protocols;
2. dieback management protocols;
3. soil management protocols;
4. rehabilitation completion criteria; and
5. the need for propagule augmentation to achieve completion criteria.

12-2 The proponent shall manage rehabilitation of the pipeline route until the rehabilitation completion criteria, referred to in condition 12-1, have been achieved.

Note: The proponent has obligations under Department of Industry and Resources legislation to maintain the vehicle access track. Certain completion criteria may not be achievable within the access track.

12-3 The proponent shall implement the Rehabilitation Management Plan required by condition 12-1 until such time as the completion criteria are met.

12-4 The proponent shall, in consultation with the Department of Environment and Conservation, review and revise, as required, the Rehabilitation Management Plan required by condition 12-1.

12-5 The proponent shall implement subsequent revisions of the Rehabilitation Management Plan required by condition 12-4.

12-6 The proponent shall make the Rehabilitation Management Plan required by condition 12-1, and subsequent revisions required by condition 12-4 publicly available in a manner approved by the Department of Environment and Conservation.

13 Acid Sulphate Soils and Dewatering

13-1 Prior to commencement of construction, the proponent shall undertake further investigations of High / Medium Risk for Acid Sulphate Soils, including field studies to clearly delineate areas.

- 13-2 Prior to trenching and excavation activities, the proponent shall prepare an Acid Sulphate Soils and Dewatering Management Plan to demonstrate that all practical measures have been included to manage the potential impacts of acid sulphate soils and dewatering activities, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.
- 13-3 The proponent shall implement and comply with the Acid Sulphate Soils and Dewatering Management Plan, required by condition 13-2.
- 13-4 The proponent shall review and revise, as required, the Acid Sulphate Soils and Dewatering Management Plan required by condition 13-2.
- 13-5 The proponent shall implement subsequent revisions of the Acid Sulphate Soils and Dewatering Management Plan required by condition 13-2.
- 13-6 The proponent shall make the Acid Sulphate Soils and Dewatering Management Plan, required by condition 13-2 and subsequent revisions required by condition 13-4 publicly available.

14 Decommissioning Plans

- 14-1 Prior to undertaking any ground-disturbing activities, the proponent shall prepare a Preliminary Decommissioning Plan for approval by the Chief Executive Officer of the Department of Environment and Conservation, which describes the framework and strategies to ensure that the site is left in an environmentally acceptable condition, and provides:
1. the rationale for the siting and design of plant and infrastructure as relevant to environmental protection;
 2. a conceptual description of the final landform at closure;
 3. a plan for a care and maintenance phase; and
 4. initial plans for the management of noxious materials.
- 14-2 At least 12 months prior to the anticipated date of closure, or at a time approved by the Environmental Protection Authority, the proponent shall submit a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition prepared on advice of the Environmental Protection Authority, for approval of the Chief Executive Officer of the Department of Environment and Conservation.

The Final Decommissioning Plan shall set out procedures and measures for:

1. removal or, if appropriate, retention of plant and infrastructure agreed in consultation with relevant stakeholders;
2. rehabilitation of all disturbed areas to a standard suitable for the agreed new land use(s); and
3. identification of contaminated areas, including provision of evidence of notification and proposed management measures to relevant statutory authorities.

14-3 The proponent shall implement the Final Decommissioning Plan required by condition 14-2 until such time as the Minister for the Environment determines, on advice of the Chief Executive Officer of the Department of Environment and Conservation, that the proponent's decommissioning responsibilities have been fulfilled.

14-4 The proponent shall make the Final Decommissioning Plan required by condition 14-2 publicly available in a manner approved by the Chief Executive Officer of the Department of Environment and Conservation.

Notes

1. Where a condition states "on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment and Conservation for the preparation of written notice to the proponent.
2. The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment and Conservation.
3. The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment and Conservation over the fulfilment of the requirements of the conditions.

Schedule 1

The Proposal (Assessment No. 1655)

The proposal is to construct and operate a number of looping sections of gas transmission pipeline adjacent and connected to the existing underground pipeline within the Dampier to Bunbury Natural Gas Pipeline Corridor. There are eleven separate looping sections proposed from south of Dampier to Wagerup West. Construction techniques will be in accordance with the requirements of *AS2885 Pipelines – Gas and Liquid Petroleum* and the Australian Pipeline Industry Association *Code of Environmental Practice*.

Table 1: Summarised description of the proposal

Element	Description
Location	Eleven loops, the first one starts approx. 2 km south of Dampier, the last loop is south of compressor station 10, which starts at about 17 km south-east of Rockingham, and ends at Wagerup West (Main Line Valve 144).
Proposed action	Construct eleven pipeline looping lengths of 660 mm diameter, buried adjacent to the existing DBNGP and looped to the existing DBNGP to increase flow of natural gas.
Total length of looping	Not more than 1300 kilometres, varying from 60 to 140 kilometres per loop (approximately).
Biogeographical regions	Pilbara, Carnarvon, Gascoyne, Yalgoo, Geraldton Sand Plains, Swan Coastal Plain
Shires	Roebourne, Ashburton, Carnarvon, Upper Gascoyne, Shark Bay, Northampton, Chapman Valley, Mullewa, Irwin, Carnamah, Coorow, Dandaragan, Gingin, Chittering, City of Swan, City of Belmont, Kalamunda, Gosnells, City of Armadale, City of Cockburn, Town of Kwinana, Serpentine-Jarrahdale, Murray, Waroona
Tenure	The pipeline will be constructed wholly within the existing DBNGP easement which is gazetted under the <i>Dampier to Bunbury Pipeline Act 1997</i> .
Easement width	The existing easement is 30 m wide. The area to be cleared and graded in the northern loops (Dampier to Muchea) will be approximately 30 m and south of Muchea, the area cleared will be 20 to 30m. In environmentally sensitive areas, working widths will be 20m.
Activities outside the easement	Turnaround bays, campsites, turkey nests, laydown areas, water supply sources, access roads (approximately 139 ha, all to be rehabilitated)
Temporary area of disturbance within easement	Not more than 3200 hectares (including not more than 1300 hectares of vegetation).

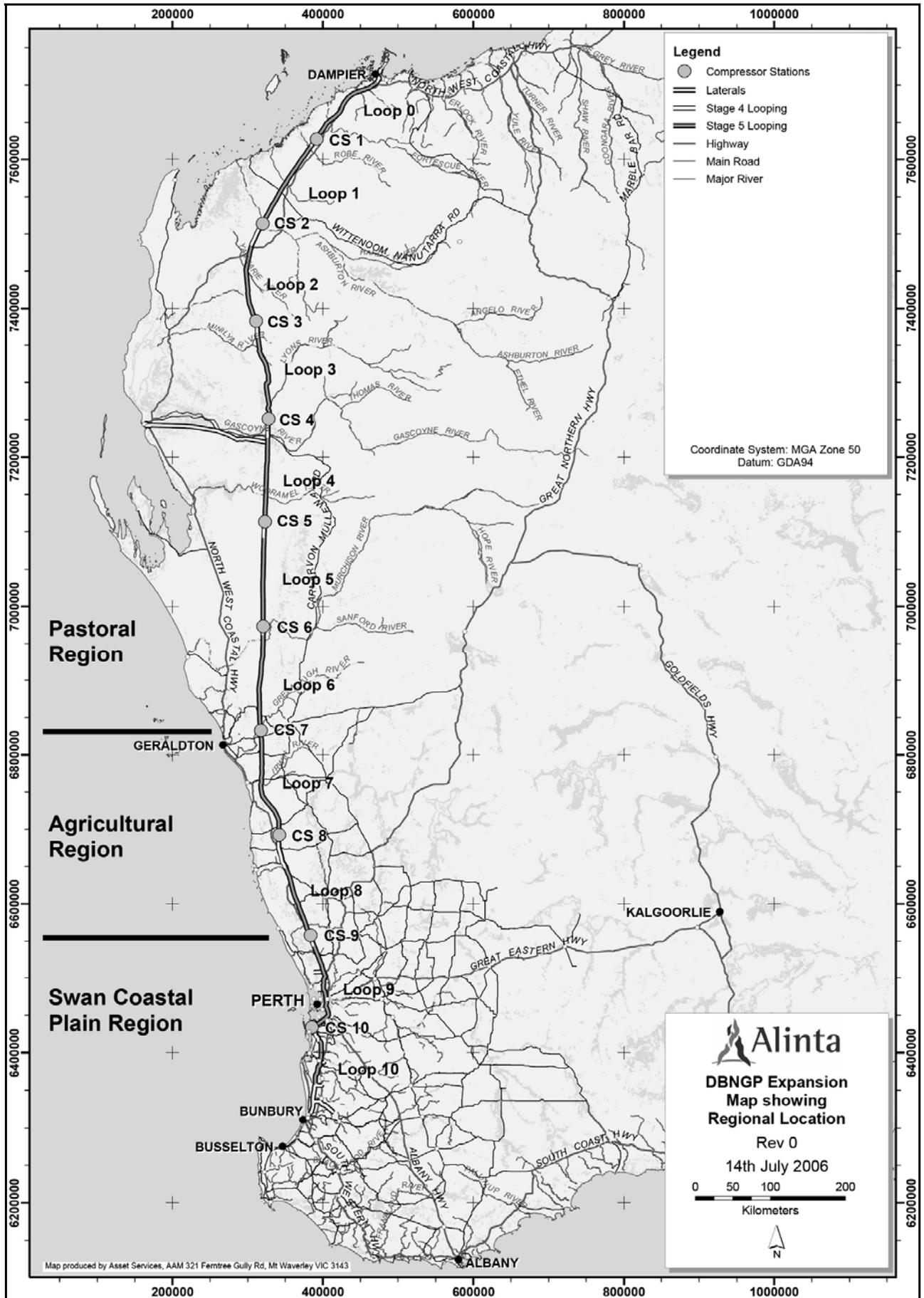


Figure 1: Pipeline Location